

NASA TECH BRIEF

Manned Spacecraft Center



NASA Tech Briefs announce new technology derived from the U.S. space program. They are issued to encourage commercial application. Tech Briefs are available on a subscription basis from the National Technical Information Service, Springfield, Virginia 22151. Requests for individual copies or questions relating to the Tech Brief program may be directed to the Technology Utilization Office, NASA, Code KT, Washington, D.C. 20546.

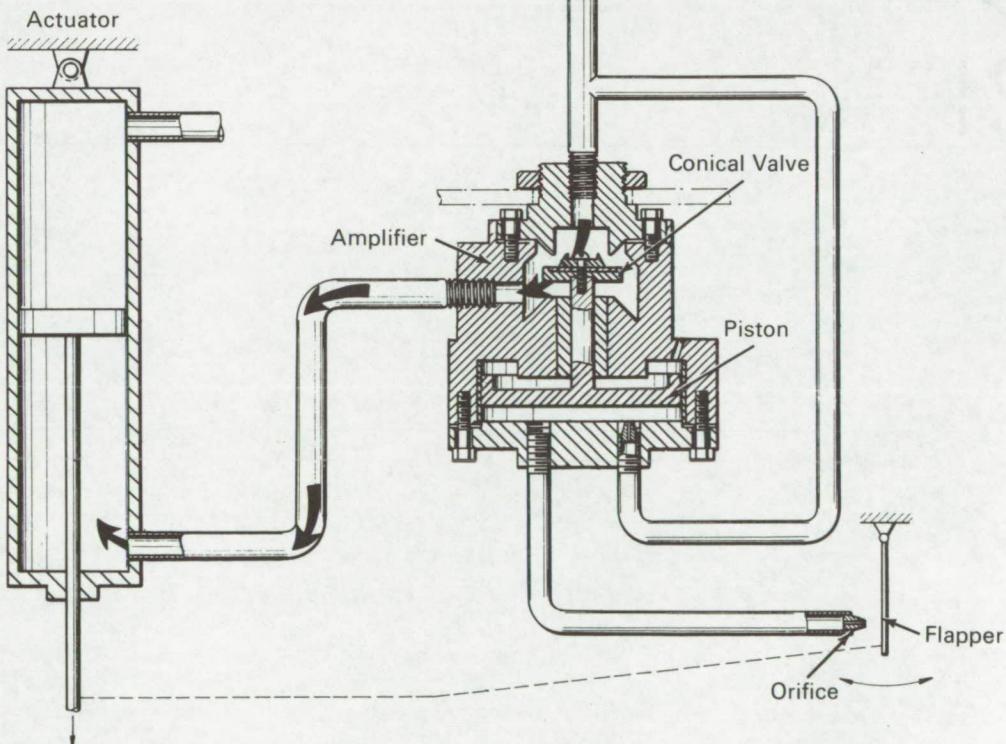
Pneumatic Amplifier Controls High Pressure Fluid Supply

The problem:

To control a high pressure supply of pneumatic fluid with an extremely small force. The pneumatic fluid supply must be isolated from the control pressure.

How it's done:

In a typical application, the load is coupled to the piston rod contained in the actuator portion of the servo system. The vertical position of the rod is determined by the rate of fluid flow passing



The solution:

A pneumatic servo system with a pneumatic amplifier containing a novel control valve that provides linear control of the flow rate.

through the control valve in the amplifier. This rate is determined by the physical position of the flapper element relative to the output from the orifice. Flow from the orifice determines the position of

(continued overleaf)

the valve controlling piston. The configuration of the valve seat is so designed that a stable linear flow rate is obtained with a regulated control pressure.

Note:

Requests for further information may be directed to:

Technology Utilization Officer
Manned Spacecraft Center, Code JM7
Houston, Texas 77058
Reference: TSP71-10081

Patent status:

This invention is owned by NASA, and a patent application has been filed. Royalty-free nonexclusive licenses for its commercial use will be granted by NASA. Inquiries concerning license rights should be made to:

Patent Counsel
Mail Code AM
Manned Spacecraft Center
Houston, Texas 77058

Source: Arthur G. Trader and
Harold L. Johnson
Manned Spacecraft Center
(MSC-12121)